

SONY®

CAMERA ADAPTOR

CMA-8A
CMA-8ACE

SERVICE MANUAL

1st Edition (Revised 1)

⚠ 警告

このマニュアルは、サービス専用です。

お客様が、このマニュアルに記載された設置や保守、点検、修理などを行うと感電や火災、人身事故につながる可能性があります。

危険をさけるため、サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegebenen Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manuel est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

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Section 1 Operating Instruction

This section is extracted
from operation manual.

SONY

3-752-361-14 (3)

Camera Adaptor

CMA-8A/8ACE

Operating Instructions page 2

Before operating the unit, please read this manual
thoroughly and retain it for future reference.

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English

OWNER'S RECORD

The model and serial numbers are located on the left side of the unit. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your authorized Sony dealer regarding this product.

Model No. CMA-8A/8ACE Serial No. _____

For the customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

WARNING FOR THE CUSTOMERS IN THE UNITED KINGDOM

THIS APPARATUS MUST BE EARTHED

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow : Earth
Blue : Neutral
Brown : Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol $\downarrow$ or coloured green or green-and-yellow. The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

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3

Overview

The Sony CMA-8A/8ACE camera adaptor is designed for operating a Sony DXC series video camera, camcorder, camera control unit or portable VTR from an AC power line. The CMA-8A is for a 120 V, 50/60 Hz power line, and the CMA-8ACE is for a 110 V to 127 V or 220 V to 240 V AC, 50/60 Hz power line.

Precautions

Safety

- Before operating the unit, check that the operating voltage of the unit is identical with the voltage of your local power supply.
- Should any material, liquid or solid, fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it further.
- Unplug the unit from the wall outlet when it is not to be used for an extended period of time.
- To disconnect the cord, pull it out by the plug. Never pull it by the cord.

Installation

- Allow adequate air circulation to prevent internal heat build-up.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight.

Cleaning

Clean the cabinet, panel and controls with a dry soft cloth or a soft cloth lightly moistened with a mild detergent solution. Do not clean the unit with any type of solvent, such as alcohol or benzine, since this may damage the finish.

Repacking

Do not discard the carton. It affords maximum protection whenever the unit is transported.

If you have any questions about this unit, contact your authorized Sony dealer.

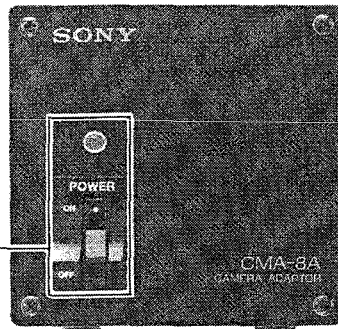
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Location and Function of Parts

Front panel

Power switch and indicator

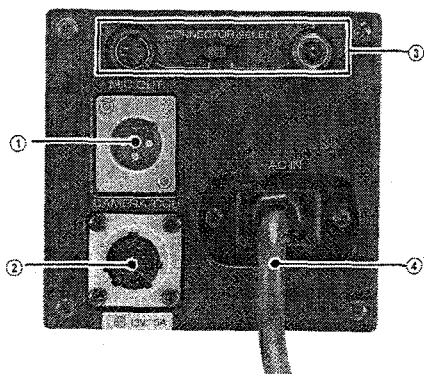
To turn on, press the ON side, and the indicator will light up.



5

Location and Function of Parts

Rear panel: CMA-8A



6

- ① **MIC OUT (microphone output) connector (XLR 3-pin, male)**
This connector supplies the audio signal sent from a video camera.
Connect it to the microphone input connector on a VTR.

Pin assignment

- 1: Shield
2: Hot
3: Cold



- ② **CAMERA/CCU connector (Q-type 14-pin, female)**
This connector accepts and supplies the power source, audio and video signals, and control signals. Connect this with a video camera, CCU or VTR.

- ③ **VIDEO OUTPUT (left: Y/C separate video output, right: composite video output) connectors and CONNECTOR SELECT switch**

Use the connector appropriate to the signal supplied from a video camera, and set the switch according to the connector used.

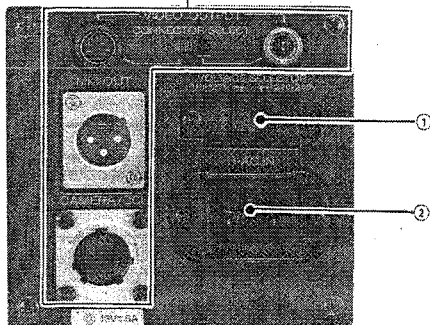
Signal supplied from a video camera	Connector used and switch setting
Y/C separate video	Left
Composite video	Right

Note This switch does not select the signal which is output from a video camera, VBS or Y/C.

- ④ **AC power cord**
Connect to the AC power source.

Rear Panel: CMA-8ACE

See the description of the CMA-8A.



① VOLTAGE SELECTOR

Make the appropriate setting for your local power voltage.

② AC IN receptacle

Connect to the AC power source using the supplied AC power cord and plug holder.

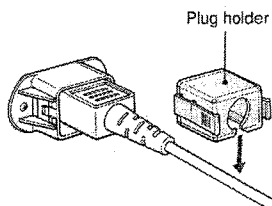
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Attaching the Plug Holder (for the CMA-8ACE only)

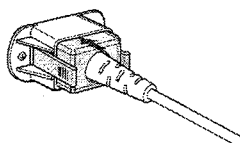
The plug holder prevents the power cord from being accidentally disconnected.

How to attach

1

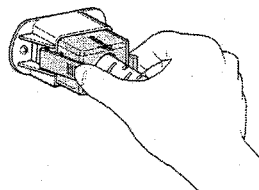


2



How to detach

Pull out the holder while depressing the levers on both sides.

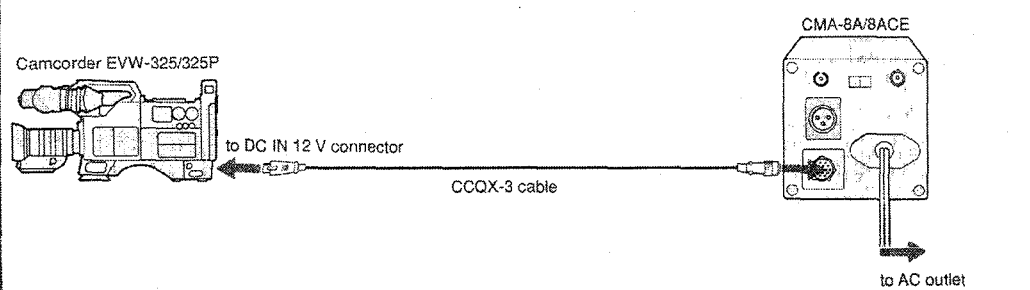


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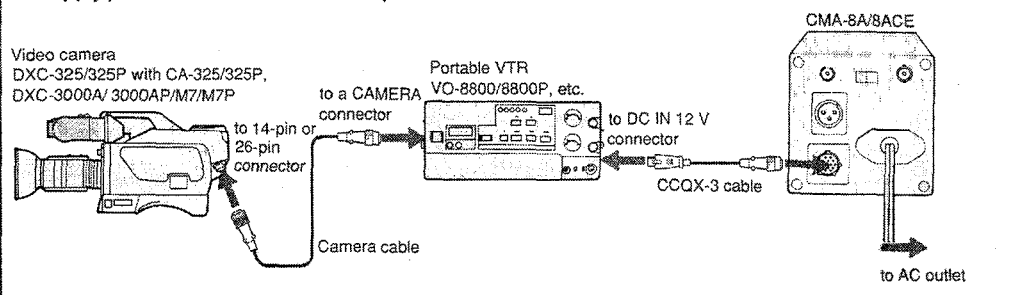
Connection Examples

(Use the camera cable designated for the camera to be connected. For details, see the instruction manual supplied with the camera.)

To supply power to a camcorder

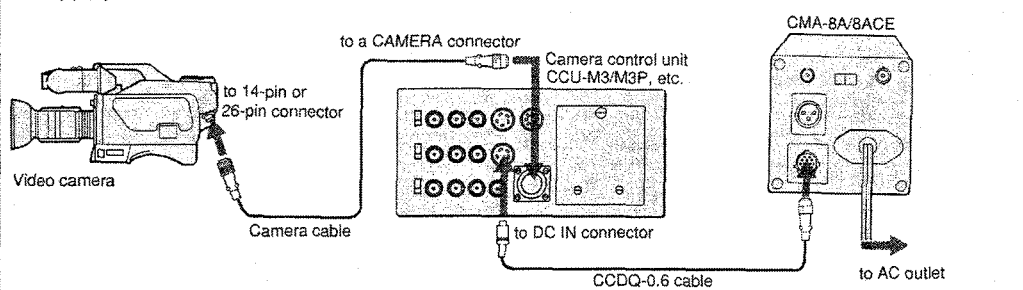


To supply power to a video camera and a portable VTR

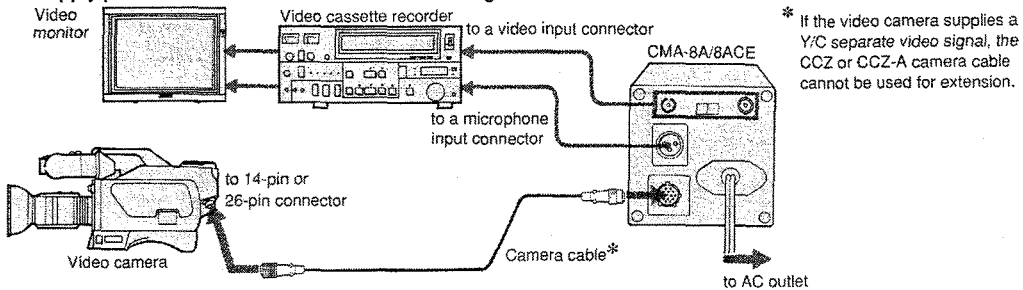


9

To supply power to a video camera and a camera control unit



To supply power to a video camera and to record using a video cassette recorder



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Turning the Power On

- 1 Turn on the POWER switch of the camera adaptor.
- 2 Turn on the connected video equipment (video camera, CCU, VTR, etc.)

To turn the power off

Turn off the connected video equipment, then the camera adaptor.

Specifications

Connectors

CAMERA/CCU	Q-type (14-pin) Video input, microphone input, power output (13 V, 5 A)
VIDEO OUTPUT	
Composite video	BNC type 1.0 Vp-p, 75 ohms, unbalanced, sync negative
Y/C separate video	4-pin mini DIN Y: 1.0 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 (CMA-8A)/0.3 (CMA-8ACE) Vp-p, 75 ohms, unbalanced
MIC OUT	XLR 3-pin, male

General

Power requirements	
CMA-8A	120 V AC, 50/60 Hz
CMA-8ACE	110 to 127 V or 220 to 240 V AC selectable 50/60 Hz
Power consumption	95 W
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Dimensions	About 105 × 105 × 308 mm (w/h/d) (4 1/4 × 4 1/4 × 12 1/8 inches)
Weight	About 2.8 kg (6 lb 3 oz)
Accessories supplied	
CMA-8A:	Operation Manual (1)
CMA-8ACE:	AC power cord (1) Plug holder (1) Operation Manual (1)

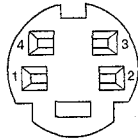
Design and specifications are subject to change without notice

Section 2

Service Overview

2-1. Connector Input/Output Signals

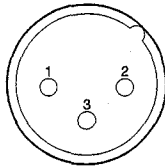
- VIDEO OUT; 1.0 V_{p-p} ± 0.1 V, sync negative 75 Ω
- S VIDEO OUT (4P, FEMALE)



(EXTERNAL VIEW)

No.	Signal	Specifications
1	Y OUT (G)	GND for Y
2	CHROMA OUT (G)	GND for CHROMA
3	Y OUT (X)	1.0 V _{p-p} , 75 Ω
4	CHROMA OUT (X)	0.286 V _{p-p} , 75 Ω

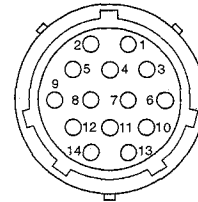
- MIC OUT (XLR 3P, MALE)



(EXTERNAL VIEW)

No.	Signal	Specifications
1	MIC OUT (G)	
2	MIC OUT (Y)	
3	MIC OUT (X)	

- CAMERA/CCU (14P, FEMALE)



(EXTERNAL VIEW)

No.	Signal	Specifications
1	GND	
2	+13 V OUT	13 to 15 V _{dc} , 3 A
3	MIC (X)	
4	MIC (Y)	
5	NC	No Connection
6	EN/Y VIDEO IN (X)	V _{BS} = 1.0 V _{p-p} Z _o = 75 Ω
7	EN VIDEO IN (G)	GND for EN VIDEO
8	NC	No Connection
9	NC	
10	NC	
11	C IN (X)	V = 286 mV _{p-p} (BURST) (75% COLOR BARS) Z _o = 75 Ω
12	NC	No Connection
13	NC	
14	NC	

Section 3 Electrical Alignment

3-1. DC 13 V Output Voltage Adjustment

Equipment Required

DC voltmeter

Preparations

1. Disconnect all the connectors on the rear panel.
2. Connector the DC voltmeter as follows.
 - (+) terminal : pin-2/CAMERA/CCU connector (on the rear panel)
 - (-) terminal : pin-1/CAMERA/CCU connector (on the rear panel)
3. Turn POWER ON.

Adjustment Procedure

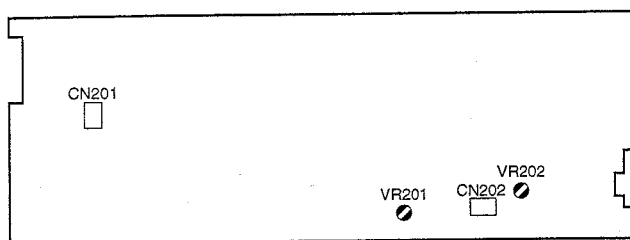
Test point : (+) : pin-2 (CAMERA/CCU connector)
 (-) : pin-1 (CAMERA/CCU connector)

CMA-8A (UC)

Adjustment point : ●VR201/926-A board
 Specification : 13 ± 0.05 Vdc

CMA-8ACE (EK)

Adjustment point : ●VR201/872-B board
 (Serial No. 49956 and higher)
 ●VR201/926-A board
 (Serial No. 40001 through 49955)
 Specification : 13 ± 0.05 Vdc



872-B Board (Soldering Side)

3-2. Limiter Adjustment

Equipment Required

DC ammeter (20 A)

Preparations

1. Disconnect all the connectors on the rear panel.
2. Connector the DC ammeter as follows.
 - (+) terminal : pin-2/CAMERA/CCU connector (on the rear panel)
 - (-) terminal : pin-1/CAMERA/CCU connector (on the rear panel)
3. Turn POWER ON.

Adjustment Procedure

Note

Since the dc current will be cut 4 seconds after the power is on, be sure to measure the dc current within 4 seconds.

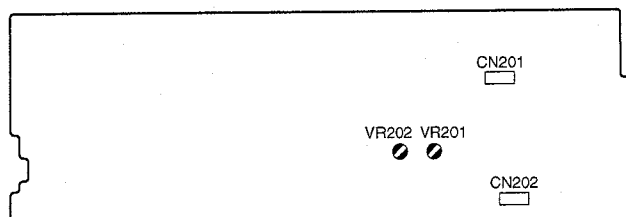
Test point : (+) : pin-2 (CAMERA/CCU connector)
 (-) : pin-1 (CAMERA/CCU connector)

CMA-8A (UC)

Adjustment point : ●VR202/926-A board
 Specification : 11.5 to 12.0 Adc

CMA-8ACE (EK)

Adjustment point : ●VR202/872-B board
 (Serial No. 49956 and higher)
 ●VR202/926-A board
 (Serial No. 40001 through 49955)
 Specification : 11.5 to 12.0 Adc



926-A Board (Soldering Side)

Section 4

Spare Parts

4-1. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked Δ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with "o" at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

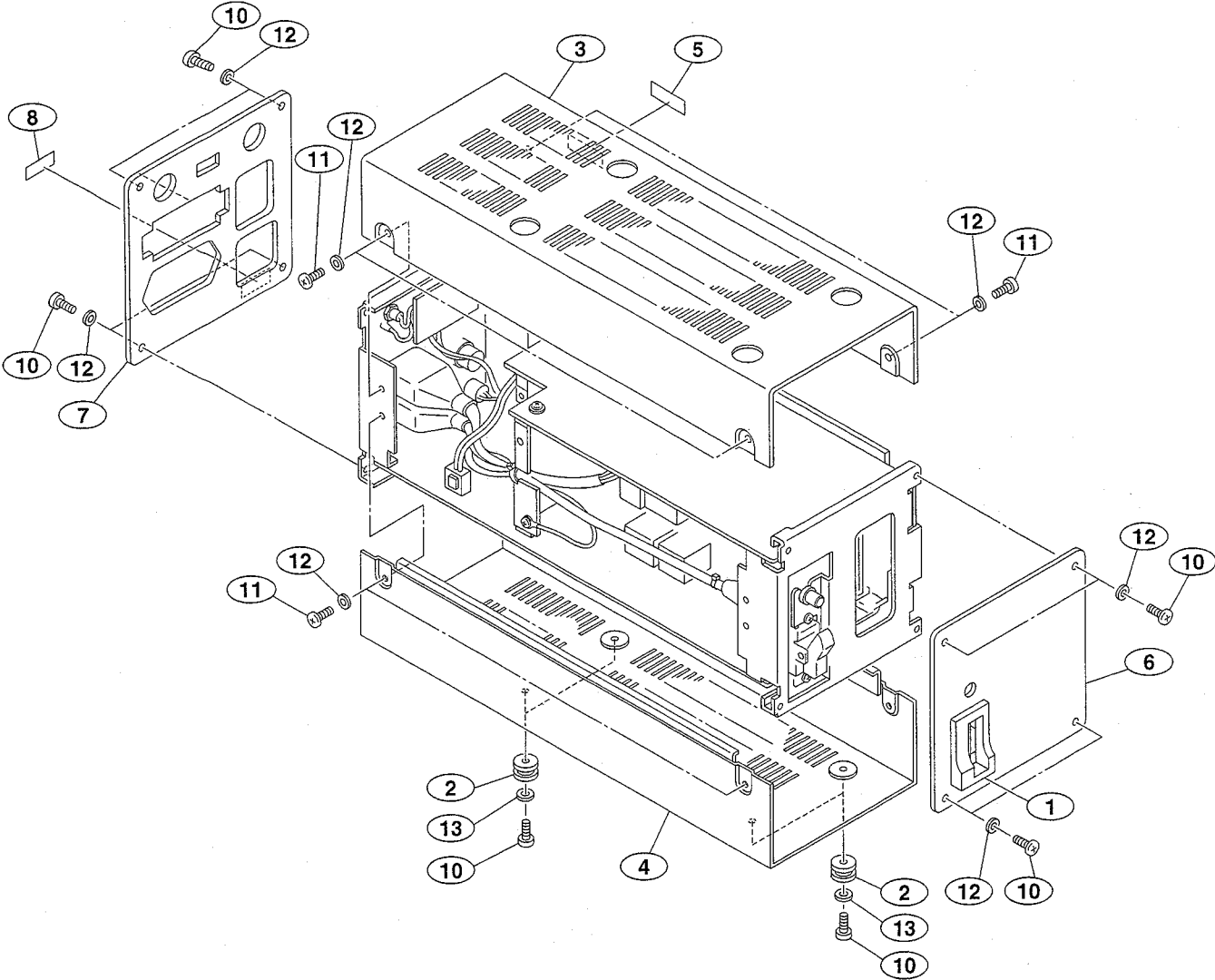
4. Destination Representation

The part indicated "For UC/EK" in the spare parts list is used in the unit written below.

For UC: The part is used in a unit for the U.S.A. and Canada.

For EK: The part is used in a unit for regions except the U.S.A. and Canada.

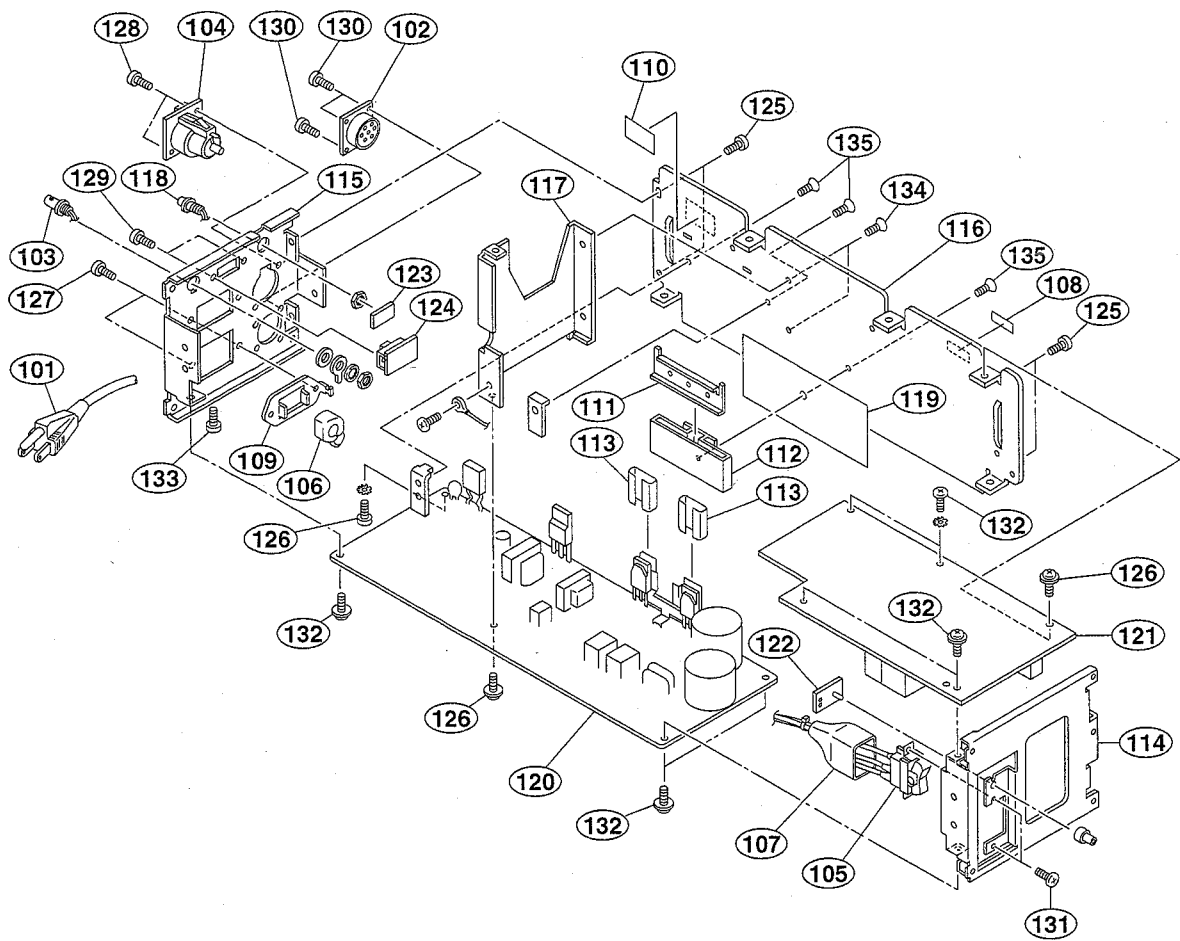
4-2. Exploded Views



Cabinet Block CMA-8A (UC)

No.	Part No.	SP Description
1	2-251-642-01	s GUARD, POWER SWITCH
2	2-279-001-00	s FOOT
3	2-279-006-00	o COVER, UPPER
4	2-279-007-00	o COVER, LOWER
5	3-703-043-31	o LABEL, CAUTION, MAIN
6	9-997-776-01	o PANEL, FRONT
7	9-997-777-01	o PANEL, REAR
8	9-997-785-01	o LABEL, POLARITY
10	9-997-800-01	o SCREW +B 3X8
11	9-997-802-01	o SCREW +B 3X6
12	9-997-808-01	o WASHER, M3
13	9-997-810-01	o SPRING WASHER, M3

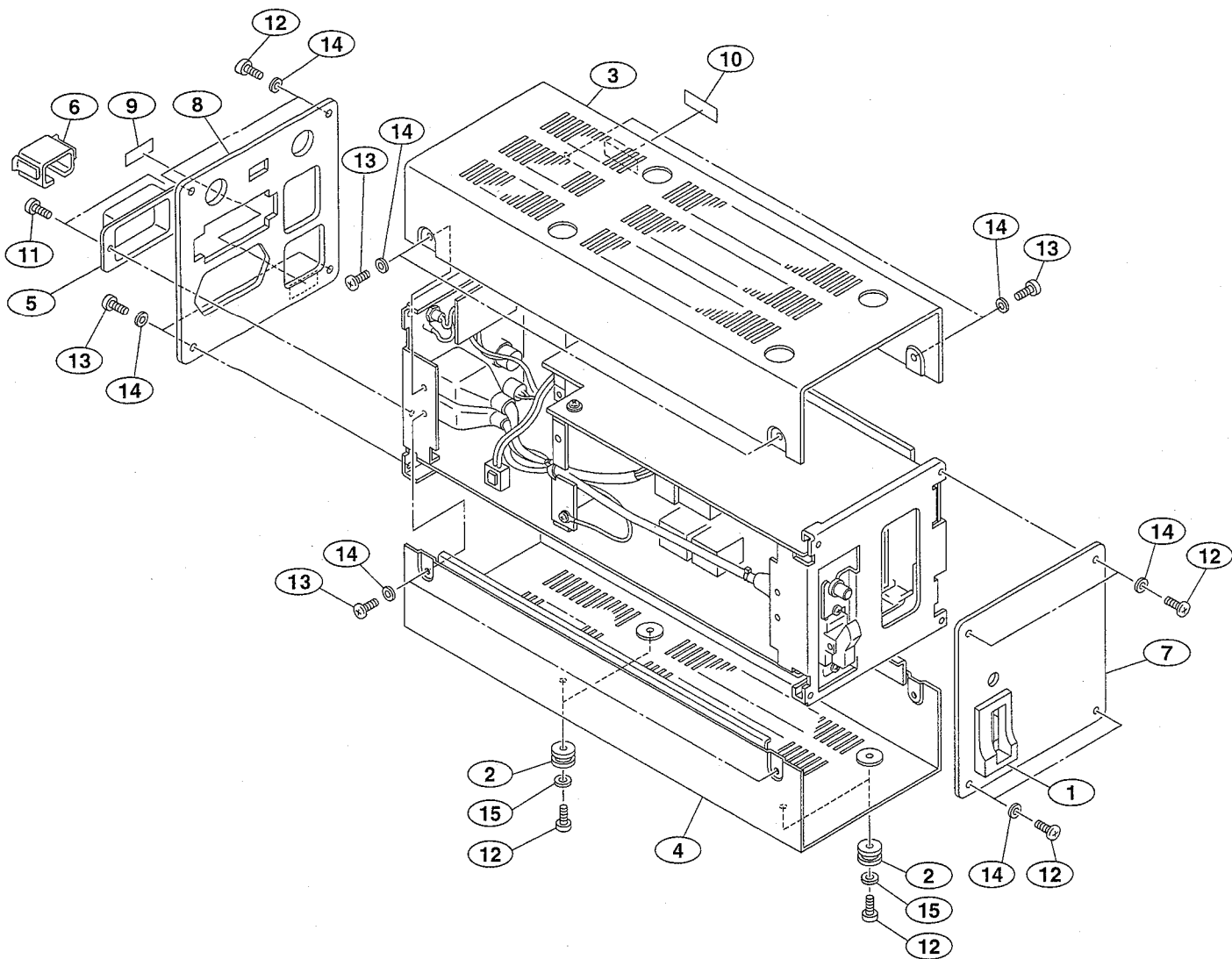
Chassis Block CMA-8A (UC)



Chassis Block CMA-8A (UC)

No.	Part No.	SP Description
101	1-534-517-00	s CORD, AC
102	1-561-040-00	s CONNECTOR, 14P FEMALE
103	1-561-781-21	s CONNECTOR, BNC
104	1-563-030-21	s CONNECTOR, 3P
105	1-570-708-11	s SWITCH, AC POWER
106	2-045-063-00	s STOPPER, CORD
107	2-269-962-00	o COVER, SWITCH
108	2-390-114-00	s LABEL, CAUTION, VARRIER
109	3-648-311-12	s BRACKET, AC CORD
110	3-703-044-26	o LABEL, CAUTION
111	4-886-820-00	o RETAINER
112	4-886-830-00	o RETAINER, TRANSFORMER
113	9-984-955-01	o SHEET (SARCON B), INSULATING
114	9-997-779-01	o CHASSIS, FRONT
115	9-997-780-01	o CHASSIS, REAR
116	9-997-781-01	o HEATSINK (A)
117	9-997-782-01	o HEATSINK (B)
118	9-997-783-01	s CONNECTOR, S
119	9-997-786-01	o SARCON
120	9-980-261-01	o MOUNTED CIRCUIT BOARD, 926-A
121	9-980-264-01	o MOUNTED CIRCUIT BOARD, 926-B
122	9-997-747-01	o MOUNTED CIRCUIT BOARD, 926-C
123	9-997-748-01	o MOUNTED CIRCUIT BOARD, 926-D
124	9-997-749-01	o MOUNTED CIRCUIT BOARD, 926-E
125	9-884-548-01	o SCREW +B 3X8
126	9-884-549-01	o SCREW +BBL 3X8
127	9-884-550-01	o SCREW +B 3X12
128	9-997-798-01	o SCREW +P 6X6
129	9-997-799-01	o SCREW +K 6X4
130	9-997-800-01	o SCREW +B 3X8
131	9-997-803-01	o SCREW +P 3X8
132	9-997-804-01	o SCREW +PSW 3X8
133	9-997-805-01	o SCREW +V 4X8
134	9-997-806-01	o SCREW +K 3X6
135	9-997-807-01	o SCREW +K 3X14

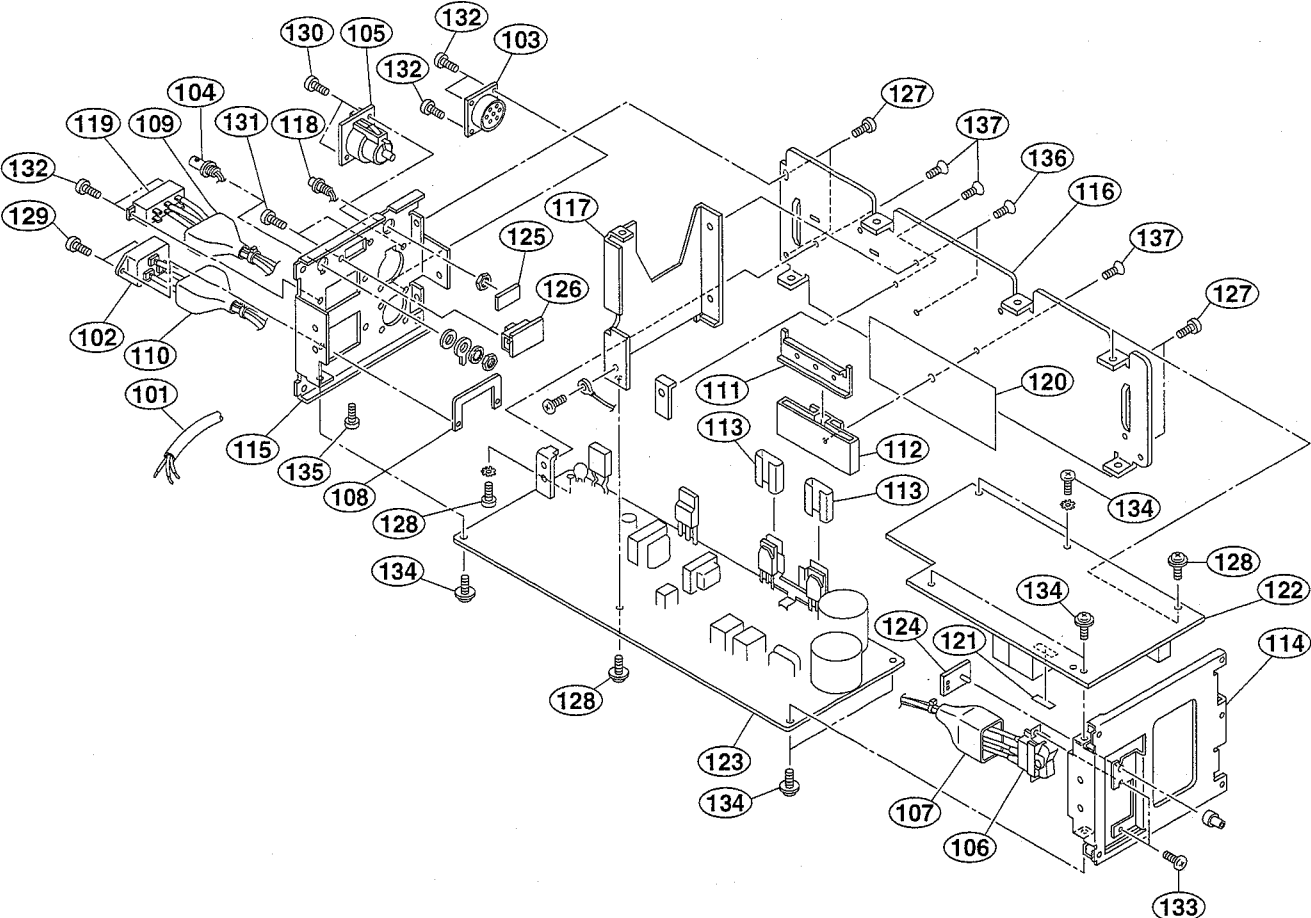
Cabinet Block CMA-8ACE (EK)



Cabinet Block CMA-8ACE (EK)

No.	Part No.	SP Description
1	2-251-642-01	s GUARD, POWER SWITCH
2	2-279-001-00	s FOOT
3	2-279-006-02	o COVER, UPPER
4	2-279-007-02	o COVER, LOWER
5	2-990-241-02	o HOLDER(A), PLUG
6	3-613-640-01	o HOLDER(C), PLUG
7	9-997-776-01	o PANEL, FRONT
8	9-997-778-01	o PANEL, REAR
9	9-997-785-01	o LABEL, POLARITY
10	3-703-043-31	o LABEL, CAUTION, MAIN
11	9-884-550-01	o SCREW +B 3X12
12	9-997-800-01	o SCREW +B 3X8
13	9-997-802-01	o SCREW +B 3X6
14	9-997-808-01	o WASHER, M3
15	9-997-810-01	o SPRING WASHER, M3

Chassis Block CMA-8ACE (EK)



No.	Part No.	SP Description
101	1-782-929-11	s CORD, POWER
102	1-580-375-21	o INLET, 3P
103	1-561-040-00	s CONNECTOR, 14P FEMALE
104	1-561-781-91	s CONNECTOR, BNC
105	1-563-030-21	s CONNECTOR, 3P
106	1-570-117-11	s SWITCH, ROCKER "AC POWER"
107	2-269-962-00	o COVER, SWITCH
108	3-625-620-00	o BRACKET, AC CONNECTOR
109	4-371-879-02	o COVER, AC SELECT
110	4-601-466-11	o COVER, 3P INLET
111	4-886-820-01	o RETAINER (A)
112	4-886-830-02	o RETAINER
113	9-984-955-01	o SHEET (SARCON B), INSULATING (S/N 40001 through 49955)
	9-884-543-01	o SHEET (SARCON B), INSULATING (S/N 49956 and higher)
114	9-997-779-01	o CHASSIS, FRONT
115	9-997-780-02	o CHASSIS, REAR
116	9-997-781-01	o HEATSINK (A)
117	9-997-782-02	o HEATSINK (B)
118	9-997-783-01	s CONNECTOR, S
119	1-570-173-21	s VOLTAGE SELECTOR
120	9-997-786-01	o SARCON
121	9-997-770-01	o LABEL, FUSE
122	9-884-491-01	o MOUNTED CIRCUIT BOARD, 872-A (S/N 49956 and higher)
	9-980-264-01	o MOUNTED CIRCUIT BOARD, 926-B (S/N 40001 through 49955)
123	9-884-492-01	o MOUNTED CIRCUIT BOARD, 872-B (S/N 49956 and higher)
	9-980-261-01	o MOUNTED CIRCUIT BOARD, 926-A (S/N 40001 through 49955)
124	9-884-536-01	o MOUNTED CIRCUIT BOARD, 872-C (S/N 49956 and higher)
	9-997-747-01	o MOUNTED CIRCUIT BOARD, 926-C (S/N 40001 through 49955)
125	9-884-537-01	o MOUNTED CIRCUIT BOARD, 872-D (S/N 49956 and higher)
	9-997-748-01	o MOUNTED CIRCUIT BOARD, 926-D (S/N 40001 through 49955)
126	9-884-538-01	o MOUNTED CIRCUIT BOARD, 872-E (S/N 49956 and higher)
	9-997-749-01	o MOUNTED CIRCUIT BOARD, 926-E (S/N 40001 through 49955)
127	9-884-548-01	o SCREW +B 3X8
128	9-884-549-01	o SCREW +BBL 3X8
129	9-884-550-01	o SCREW +B 3X12
130	9-997-798-01	o SCREW +P 6X6
131	9-997-799-01	o SCREW +K 6X4
132	9-997-800-01	o SCREW +B 3X8
133	9-997-803-01	o SCREW +P 3X8
134	9-997-804-01	o SCREW +PSW 3X8
135	9-997-805-01	o SCREW +V 4X8
136	9-997-806-01	o SCREW +K 3X6
137	9-997-807-01	o SCREW +K 3X14

4-3. Electrical Parts List

872-A BOARD S/N 49956 and higher(EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	9-884-491-01	o MOUNTED CIRCUIT BOARD, 872-A
C112	9-884-494-01	s FILM 0.1 400V
C113	1-162-901-21	s CERAMIC 0.1 10% 50V
C114	9-884-498-01	s ELECT 10 50V
C115	9-884-496-01	s ELECT 47 16V
C116	9-884-496-01	s ELECT 47 16V
C201	9-884-497-01	s ELECT 220 25V
C202	9-884-498-01	s ELECT 10 50V
C203	9-884-495-01	s CERAMIC 0.022 50V
C204	1-113-923-11	s CERAMIC 3300P 20% 250V
D101	8-719-500-06	s DIODE S3WB60
D102	9-997-687-01	s DIODE ERA91-02V3R
D103	8-719-312-24	s DIODE EP01C
D104	9-997-687-01	s DIODE ERA91-02V3R
D105	8-719-110-08	s DIODE RD8.2ESB2
D106	9-997-687-01	s DIODE ERA91-02V3R
D201	9-997-687-01	s DIODE ERA91-02V3R
D202	9-997-687-01	s DIODE ERA91-02V3R
D203	9-997-687-01	s DIODE ERA91-02V3R
D204	9-997-731-01	s DIODE RD20ES-T1-AB2
FR101	Δ 9-997-732-01	s RESISTOR WITH FUSE 15 5W 130°C
L102	Δ 9-884-501-01	s COIL, CHOKE
Q103	9-997-735-01	s TRANSISTOR 2SC3657
Q104	8-729-205-11	s TRANSISTOR 2SC1815Y-TPE2
Q105	8-729-020-73	s TRANSISTOR 2SC2655-Y(TPE6)
Q106	8-729-205-11	s TRANSISTOR 2SC1815Y-TPE2
R101	9-997-700-01	s CARBON 1K 1/6W
R102	9-884-506-01	s METAL 100 1W
R103	Δ 9-997-756-01	s RES, FUSIBLE 10 1/4W
R104	9-884-512-01	s METAL 150K 1W
R105	9-884-504-01	s CARBON 120K 1/2W
R106	9-997-703-01	s CARBON 1.5K 1/6W
R107	9-997-757-01	s CARBON 15 1/4W
R108	9-997-706-01	s CARBON 330 1/6W
R109	9-997-700-01	s CARBON 1K 1/6W
R110	9-884-508-01	s METAL 560 1W
R111	9-997-700-01	s CARBON 1K 1/6W
R112	Δ 9-997-756-01	s RES, FUSIBLE 10 1/4W
R113	9-997-708-01	s CARBON 33K 1/6W
R123	9-884-512-01	s METAL 150K 1W
R124	9-884-505-01	s CARBON 220K 1/2W
R125	9-884-503-01	s CARBON 560K 1/4W
R126	9-997-714-01	s CARBON 6.8K 1/6W
R127	9-884-505-01	s CARBON 220K 1/2W
R128	9-884-504-01	s CARBON 120K 1/2W
R201	9-884-510-01	s METAL 470 2W
R202	9-884-510-01	s METAL 470 2W
R203	9-997-700-01	s CARBON 1K 1/6W
R204	9-997-700-01	s CARBON 1K 1/6W
SR201	9-997-764-01	s THYRISTOR CR3CM-8
TR101	9-884-513-01	s TRIAC BCR8PM-12LI-AA
T102	Δ 9-884-514-01	s CONVERTER

872-B BOARD S/N 49956 and higher(EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	9-884-492-01	o MOUNTED CIRCUIT BOARD, 872-B
C101	Δ 9-884-518-01	s FILM 0.47 275V
C102	Δ 9-884-519-01	s FILM 1 275V
C103	9-884-520-01	s FILM 1 250V
C104	9-884-520-01	s FILM 1 250V
C105	1-136-203-11	s FILM 0.01 5% 630V
C106	Δ 1-113-924-11	s CERAMIC 4700P 20% 250V
C107	Δ 1-113-924-11	s CERAMIC 4700P 20% 250V
C108	Δ 1-113-924-11	s CERAMIC 4700P 20% 250V
C109	Δ 1-113-924-11	s CERAMIC 4700P 20% 250V
C110	9-997-680-01	s CERAMIC 1000P 1KV
C111	9-997-680-01	s CERAMIC 1000P 1KV
C117	9-884-527-01	s ELECT 390 250V
C118	9-884-527-01	s ELECT 390 250V
C205	9-997-680-01	s CERAMIC 1000P 1KV
C206	9-997-680-01	s CERAMIC 1000P 1KV
C207	9-884-525-01	s ELECT 2200 35V
C208	9-884-525-01	s ELECT 2200 35V
C209	9-939-938-01	s CERAMIC 3300P 250V
C210	9-884-523-01	s ELECT 220 25V
C211	9-884-526-01	s ELECT 0.47 50V
C212	9-884-521-01	s CERAMIC 0.0047 50V
C213	9-884-522-01	s CERAMIC 1000P 50V
C214	9-884-524-01	s ELECT 22 35V
C215	9-884-524-01	s ELECT 22 35V
D205	9-997-688-01	s DIODE ESAC93M-02
D206	9-997-687-01	s DIODE ERA91-02V3R
D207	9-997-687-01	s DIODE ERA91-02V3R
D208	9-997-687-01	s DIODE ERA91-02V3R
F101	Δ 1-532-237-00	s FUSE 3.15A 250V
	(1-533-225-11	s HOLDER, FUSE)
IC201	9-884-528-01	s IC ZHMA6886A
L101	Δ 9-884-529-01	s FILTER, LINE 15mH
L201	9-997-690-01	s COIL, CHOKE
L202	9-984-951-01	s COIL, DRAM
Q101	9-984-942-01	s TRANSISTOR 2SC3318
Q102	9-984-942-01	s TRANSISTOR 2SC3318
R114	9-884-530-01	s METAL 150K 1W
R115	9-884-530-01	s METAL 150K 1W
R116	9-997-695-01	o METAL 2.7 1W
R117	1-249-455-11	s CARBON 4.7 5% 1/4W
R118	9-997-695-01	o METAL 2.7 1W
R119	1-249-455-11	s CARBON 4.7 5% 1/4W
R120	9-997-694-01	s WIREWOUND 47 5W
R121	1-202-846-00	s SOLID 470K 10% 1/2W
R122	1-202-846-00	s SOLID 470K 10% 1/2W
R205	9-884-531-01	s WIREWOUND 0.02 5W
R206	9-984-935-01	s WIREWOUND 100 5W
R207	9-997-704-01	s CARBON 2.2K 1/6W
R208	9-997-693-01	s WIREWOUND 10 5W
R209	9-997-701-01	s CARBON 10K 1/6W
R210	9-997-712-01	s CARBON 5.6K 1/6W
T101	Δ 9-997-737-01	s CONVERTER
T103	Δ 9-997-738-01	s DRIVE
T104	Δ 9-997-738-01	s DRIVE

(872-B BOARD)

Ref. No. or Q'ty	Part No.	SP Description
VR201	9-884-532-01	s RES, VAR METAL 2K
VR202	9-884-532-01	s RES, VAR METAL 2K

872-C BOARD S/N 49956 and higher(EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	9-884-536-01	o MOUNTED CIRCUIT BOARD, 872-C
1pc	2-241-825-00	s HOLDER, LAMP
D209	8-719-820-15	s DIODE TLG115A

872-D BOARD S/N 49956 and higher(EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	9-884-537-01	o MOUNTED CIRCUIT BOARD, 872-D

872-E BOARD S/N 49956 and higher(EK)

Ref. No. or Q'ty	Part No.	SP Description
1pc	9-884-538-01	o MOUNTED CIRCUIT BOARD, 872-E
C216	9-884-539-01	s FILM 0.068 275V
SW201	9-997-750-01	s SWITCH, SLIDE "CONNECTOR SELECT"

926-A BOARD

Ref. No. or Q'ty Part No.	SP Description
1pc	9-980-261-01 o MOUNTED CIRCUIT BOARD, 926-A
C117	9-997-681-01 s ELECT 390 250V
C118	9-997-681-01 s ELECT 390 250V
C119	1-130-798-00 s FILM 1 5% 250V
C120	1-130-798-00 s FILM 1 5% 250V
C121	1-161-754-00 s CERAMIC 1000P 10% 3KV
C122	1-161-754-00 s CERAMIC 1000P 10% 3KV
C123	1-136-203-11 s FILM 0.01 5% 630V
C205	1-164-143-11 s CERAMIC 1000P 10% 1KV
C206	1-164-143-11 s CERAMIC 1000P 10% 1KV
C207	9-939-803-01 s ELECT 220 20% 35V
C208	9-939-803-01 s ELECT 220 20% 35V
C209	Δ 9-939-938-01 s CERAMIC 3300P 250V
C210	9-936-802-01 s ELECT 220 25V
C211	9-936-804-01 s ELECT 0.47 50V
C212	9-997-677-01 s FILM 0.022 5% 100V
C213	9-997-676-01 s FILM 0.001 5% 200V
C214	1-106-359-00 s FILM 0.0047 5% 200V
C215	1-106-359-00 s FILM 0.0047 5% 200V
C216	9-936-804-01 s ELECT 0.47 50V
C217	9-936-804-01 s ELECT 0.47 50V
C218	9-936-804-01 s ELECT 0.47 50V
C219	9-939-805-01 s ELECT 22 20% 35V
C220	9-939-805-01 s ELECT 22 20% 35V
D205	9-997-688-01 s DIODE ESAC93M-02
D206	9-997-687-01 s DIODE ERA91-02V3R
D207	9-997-687-01 s DIODE ERA91-02V3R
D208	9-997-687-01 s DIODE ERA91-02V3R
D209	8-719-821-31 s DIODE 1SS178TP-A7
D210	8-719-110-45 s DIODE RD16ESB2
D211	8-719-821-31 s DIODE 1SS178TP-A7
D212	8-719-821-31 s DIODE 1SS178TP-A7
IC201	8-759-937-59 s IC MB3759
IC202	8-759-135-80 s IC UPC358C
IC203	8-759-135-80 s IC UPC358C
IC204	8-759-135-80 s IC UPC358C
L201	9-997-690-01 s COIL, CHOKE
L202	9-984-951-01 s COIL, DRAM
Q101	8-729-902-41 s TRANSISTOR 2SC3318
Q102	8-729-902-41 s TRANSISTOR 2SC3318
Q201	8-729-374-02 s TRANSISTOR 2SB740
Q202	8-729-374-02 s TRANSISTOR 2SB740
Q203	8-729-173-38 s TRANSISTOR 2SA733-K
Q204	8-729-173-38 s TRANSISTOR 2SA733-K
R116	1-216-354-11 s METAL 2.7 5% 1W
R117	1-247-688-11 s METAL 10 5% 1/4W
R118	1-216-354-11 s METAL 2.7 5% 1W
R119	1-247-688-11 s METAL 10 5% 1/4W
R120	1-207-682-00 s METAL 47 10% 6W
R205	1-217-654-11 s WIREWOUND 0.02 10% 5W
R206	9-984-935-01 s WIREWOUND 100 5W
R207	1-249-421-11 s CARBON 2.2K 5% 1/4W
R208	1-247-702-11 s CARBON 150 5% 1/4W
R209	1-249-413-11 s CARBON 470 5% 1/4W
R210	1-249-423-11 s CARBON 3.3K 5% 1/4W
R211	1-249-421-11 s CARBON 2.2K 5% 1/4W

(926-A BOARD)

Ref. No. or Q'ty Part No.	SP Description
R212	1-216-471-11 s METAL 27 5% 3W
R213	1-249-409-11 s CARBON 220 5% 1/4W
R214	1-247-708-11 s CARBON 470 5% 1/4W
R215	1-249-409-11 s CARBON 220 5% 1/4W
R216	1-247-708-11 s CARBON 470 5% 1/4W
R217	1-249-423-11 s CARBON 3.3K 5% 1/4W
R218	1-249-427-11 s CARBON 6.8K 5% 1/4W
R219	1-249-411-11 s CARBON 330 5% 1/4W
R220	9-997-713-01 s CARBON 680 1/4W
R221	1-247-891-00 s CARBON 330K 5% 1/4W
R222	1-249-417-11 s CARBON 1K 5% 1/4W
R223	1-249-427-11 s CARBON 6.8K 5% 1/4W
R224	1-249-417-11 s CARBON 1K 5% 1/4W
R225	1-249-419-11 s CARBON 1.5K 5% 1/4W
R226	1-249-429-11 s CARBON 10K 5% 1/4W
R227	1-247-708-11 s CARBON 470 5% 1/4W
R228	1-249-426-11 s CARBON 5.6K 5% 1/4W
R229	1-249-427-11 s CARBON 6.8K 5% 1/4W
R230	1-249-429-11 s CARBON 10K 5% 1/4W
R231	1-249-435-11 s CARBON 33K 5% 1/4W
R232	1-249-429-11 s CARBON 10K 5% 1/4W
R233	1-249-433-11 s CARBON 22K 5% 1/4W
R234	1-249-411-11 s CARBON 330 5% 1/4W
R235	9-997-713-01 s CARBON 680 1/4W
R236	1-249-427-11 s CARBON 6.8K 5% 1/4W
R237	1-249-417-11 s CARBON 1K 5% 1/4W
R238	1-247-895-00 s CARBON 470K 5% 1/4W
R239	9-997-702-01 s CARBON 100K 1/6W
R240	9-997-702-01 s CARBON 100K 1/6W
R241	Δ 1-215-445-00 s METAL 10K 1% 1/4W
R242	1-215-408-00 s METAL 300 1% 1/4W
R243	1-247-891-00 s CARBON 330K 5% 1/4W
R244	9-997-702-01 s CARBON 100K 1/6W
R245	9-997-702-01 s CARBON 100K 1/6W
R246	9-997-699-01 s CARBON 100 5% 1/6W
R247	Δ 1-215-445-00 s METAL 10K 1% 1/4W
R248	1-215-408-00 s METAL 300 1% 1/4W
R249	9-997-699-01 s CARBON 100 5% 1/6W

926-B BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc 9-980-264-01 o MOUNTED CIRCUIT BOARD, 926-B

C101 Δ 1-136-185-00 s FILM 0.22 20% 250V (UC)
C101 Δ 1-136-537-11 s FILM 0.47 20% 250V (EK)
C102 Δ 1-136-537-11 s FILM 0.47 20% 250V (EK)
C103 Δ 1-136-185-00 s FILM 0.22 20% 250V (UC)
C103 Δ 1-136-537-11 s FILM 0.47 20% 250V (EK)

C104 Δ 1-136-537-11 s FILM 0.47 20% 250V (EK)
C105 Δ 1-136-537-11 s FILM 0.47 20% 250V (EK)
C106 Δ 9-939-940-01 s CERAMIC 3300P 10% 250V
C107 Δ 9-939-940-01 s CERAMIC 3300P 10% 250V (EK)
C108 Δ 9-939-940-01 s CERAMIC 3300P 10% 250V

C109 Δ 9-939-940-01 s CERAMIC 3300P 10% 250V (EK)
C110 9-939-939-01 s CERAMIC 4700P 20% 250V
C111 9-939-939-01 s CERAMIC 4700P 20% 250V
C112 1-136-200-11 s FILM 0.15 5% 400V
C113 1-108-638-11 s FILM 0.1 10% 100V

C114 9-939-806-01 s ELECT 10 20% 50V
C115 9-936-807-01 s ELECT 47 20% 16V
C116 9-936-807-01 s ELECT 47 20% 16V
C201 9-936-802-01 s ELECT 220 25V
C202 9-939-806-01 s ELECT 10 20% 50V

C203 1-106-375-12 s FILM 0.022 5% 200V
C204 1-162-168-00 s CERAMIC 3300P 10% 250V

D101 8-719-505-60 s DIODE S5VB60
D102 9-997-687-01 s DIODE ERA91-02V3R
D103 8-719-312-24 s DIODE EP01C
D104 9-997-687-01 s DIODE ERA91-02V3R
D105 8-719-110-17 s DIODE RD10ES-B2

D106 9-997-687-01 s DIODE ERA91-02V3R
D201 9-997-687-01 s DIODE ERA91-02V3R
D202 9-997-687-01 s DIODE ERA91-02V3R
D203 8-719-109-93 s DIODE RD6.2ES-B2
D204 9-997-731-01 s DIODE RD20ES-T1-AB2

F101 Δ 1-532-745-11 s FUSE 3.15A 125V (UC)
(1-533-225-11 s HOLDER, FUSE)
F101 Δ 1-532-237-00 s FUSE 3.15A 250V (EK)
(1-533-225-11 s HOLDER, FUSE)

FR101 Δ 9-997-732-01 s RESISTOR WITH FUSE 15 5W 130°C

L101 Δ 9-997-733-01 s LINE FILTER 8mH
L102 Δ 9-997-734-01 s LINE FILTER 8mH (EK)
L103 Δ 9-997-733-01 s LINE FILTER 8mH

Q103 8-729-802-14 s TRANSISTOR 2SC3460
Q104 8-729-205-11 s TRANSISTOR 2SC1815Y-TPE2

R101 Δ 1-249-417-11 s CARBON 1K 5% 1/4W
R102 Δ 1-215-863-11 s METAL 100 5% 1W
R103 Δ 1-212-857-00 s RES, FUSE 10 5% 1/4W
R104 Δ 1-215-904-11 s METAL 100K 5% 2W
R105 1-214-787-00 s CARBON 270K 1% 1/4W

R106 Δ 1-249-419-11 s CARBON 1.5K 5% 1/4W
R107 Δ 1-247-690-11 s CARBON 15 5% 1/4W
R108 Δ 1-249-411-11 s CARBON 330 5% 1/4W
R109 Δ 1-249-417-11 s CARBON 1K 5% 1/4W
R110 Δ 1-216-431-11 s METAL 560 5% 1W

R111 Δ 1-249-417-11 s CARBON 1K 5% 1/4W
R112 Δ 1-212-857-11 s RES, FUSE 10 5% 1/4W
R113 Δ 1-249-435-11 s CARBON 33K 5% 1/4W
R114 Δ 1-215-904-11 s METAL 100K 5% 2W

(926-B BOARD)

Ref. No.

or Q'ty Part No. SP Description

R115 Δ 1-215-904-11 s METAL 100K 5% 2W
R121 1-202-846-11 s COMP 470K 10% 1/2W (EK)
R122 1-202-846-11 s COMP 470K 10% 1/2W (EK)
R201 1-215-890-11 s METAL 470 5% 2W
R202 1-247-719-11 s CARBON 3.3K 5% 1/4W

R203 Δ 1-249-417-11 s CARBON 1K 5% 1/4W
R204 Δ 1-249-417-11 s CARBON 1K 5% 1/4W

SR201 9-997-764-01 s THYRISTOR CR3CM-8
SR202 8-719-000-28 s THYRISTOR CR02AM-8
SR203 8-719-000-28 s THYRISTOR CR02AM-8

T101 Δ 9-997-737-01 s CONVERTER
T102 Δ 9-997-765-01 s CONVERTER
T103 Δ 9-939-716-01 s DRIVE
T104 Δ 9-939-716-01 s DRIVE

TA101 9-997-766-01 s TRIAC BCR8PM-12L-A8

VR201 1-224-250-11 s RES, VAR METAL 2.2K
VR202 1-224-250-11 s RES, VAR METAL 2.2K

926-C BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc 9-997-747-01 o PRINTED CIRCUIT BOARD, 926-C

D213 8-719-820-15 s DIODE TLG115A
2-241-825-00 s HOLDER, LAMP

926-D BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc 9-997-748-01 o PRINTED CIRCUIT BOARD, 926-D

926-E BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc 9-997-749-01 o PRINTED CIRCUIT BOARD, 926-E

S102 9-997-750-01 s SWITCH, SLIDE "CONNECTOR SELECT"

FRAME

Ref. No.
or Q'ty Part No. SP Description

NOTE

- *1:S/N 10001 and higher(UC)
- *2:S/N 40001 through 49955(EK)
- *3:S/N 49956 and higher(EK)

1pc Δ 1-534-517-00 s CORD, AC (UC)
 1pc Δ 1-782-929-11 s CORD, AC (EK)
 1pc 9-997-744-01 o HARNESS
 *1,2 (FROM CN203/926-A BOARD TO 926-C BOARD)
 1pc 9-997-773-01 o HARNESS
 *1,2 (FROM CN202/926-A BOARD TO 926-B BOARD)
 *3 (FROM CN202/872-B BOARD TO 872-A BOARD)
 1pc 9-997-795-01 o HARNESS
 *1,2 (FROM CN201/926-A BOARD TO CN102)
 *3 (FROM CN201/872-B BOARD TO CN102)

CN101 Δ 1-580-375-21 o 3P INLET (EK)
 CN102 1-561-040-00 s CONNECTOR, 14P, FEMALE
 CN103 1-561-781-91 s CONNECTOR, BNC
 CN104 1-563-030-21 s CONNECTOR, 3P
 CN105 9-997-783-01 s CONNECTOR, S 4P

S101 Δ 1-570-743-11 s SWITCH, ROCKER "POWER" (UC)
 S101 Δ 1-570-117-11 s SWITCH, ROCKER "POWER" (EK)
 S102 Δ 1-570-173-21 s VOLTAGE SELECTOR (EK)

SUPPLIED ACCESSORIES

Ref. No.
or Q'ty Part No. SP Description

1pc Δ 3-752-361-14 s MANUAL, INSTRUCTION

Section 5

Semiconductor Pin Assignments

The semiconductors in the manual are listed by equivalent types. Thus the external view or the index mark indication may differ from the actual type.

In some cases incompatible types are also listed, therefore, when a part is to be replaced, also refer to the Spare Parts section.

Pin assignments and block diagrams are based on the IC manufacturer's data book.

ここに記載されている半導体は、それぞれの機能を等価的に表わしたものです。

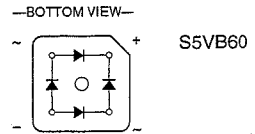
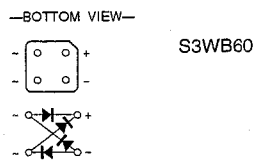
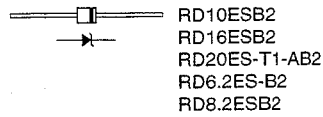
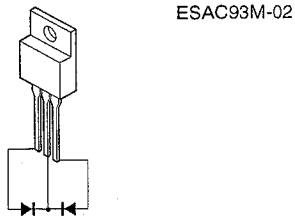
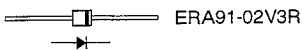
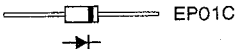
外観やインデックスマークの表示方法が実物と異なる場合があります。

なお、互換性のない型名を併記している場合がありますので、部品を交換するときは、Spare Partsの章を参照してください。ピン配置およびブロック図はICメーカーのデータブックに従いました。

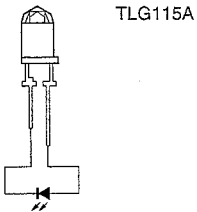
DIODE	Page	LED	Page	TRANSISTOR	Page	IC	Page
1SS178TP-A7	5-2	TLG115A	5-2	2SA1015YTPE2	5-2	MB3759	5-3
EP01C	5-2			2SA1020-Y-TPE6	5-2		
ERA91-02V3R	5-2			2SA733-K	5-2	UPC358C	5-3
ESAC93M-02	5-2			2SB740	5-2		
				2SC1815-Y-TPE2	5-2		
RD10ESB2	5-2			2SC2655-Y (TPE6)	5-2		
RD16ESB2	5-2			2SC3318	5-2		
RD20ES-T1-AB2	5-2			2SC3460	5-2		
RD6.2ES-B2	5-2			2SC3549	5-2		
RD8.2ESB2	5-2			2SC3657	5-2		
S3WB60	5-2						
S5VB60	5-2						

Diode, LED, Transistor

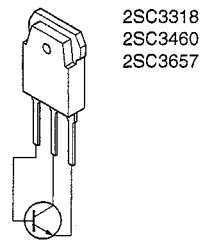
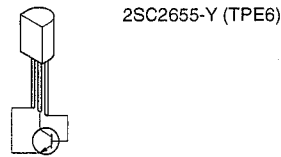
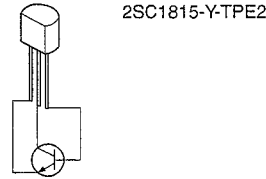
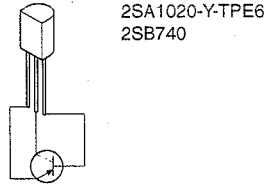
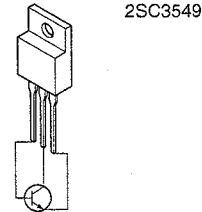
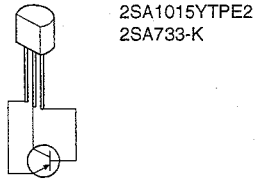
DIODE



LED



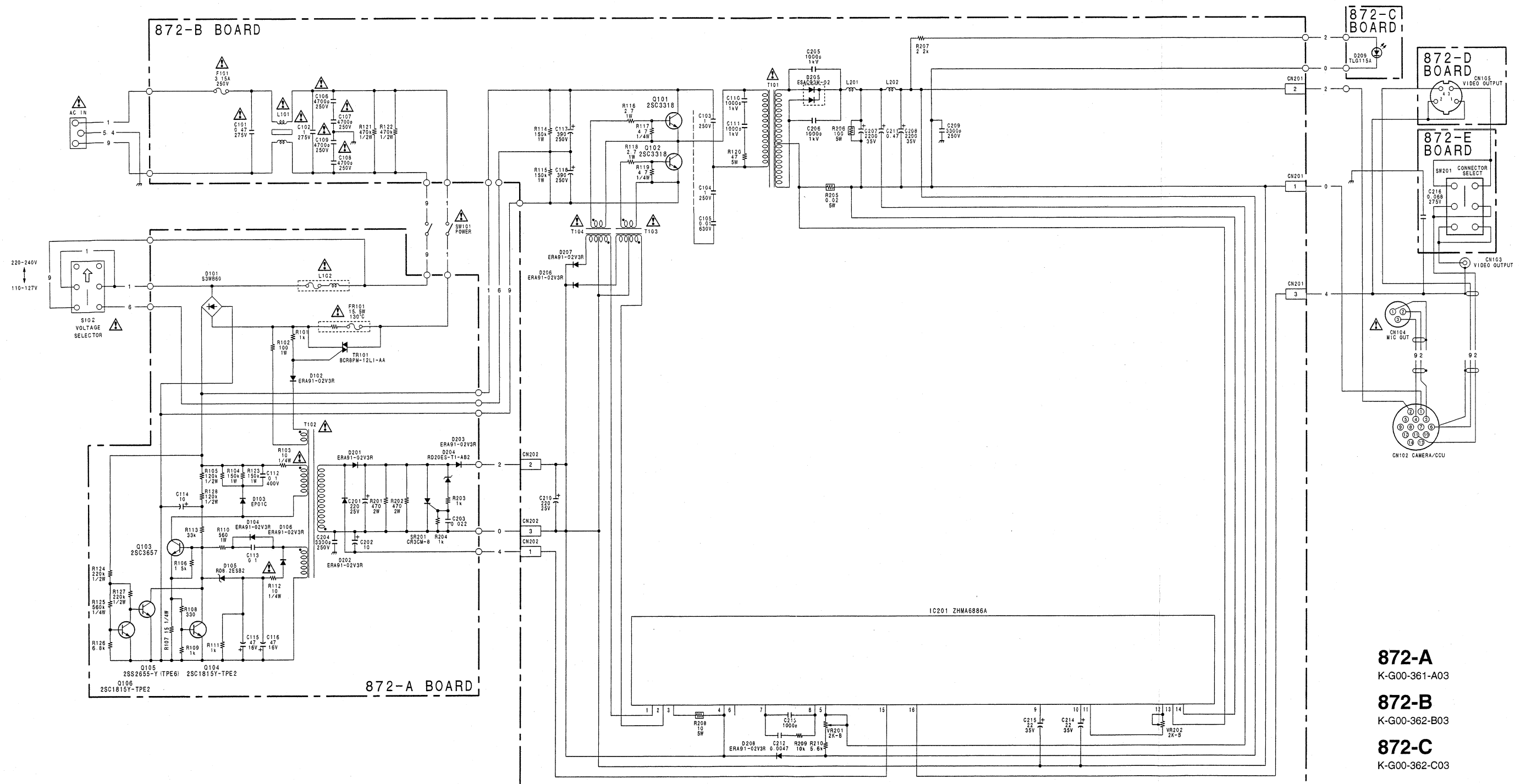
TRANSISTOR



Section 6

Schematic Diagrams

CMA-8ACE (EK) : S/N 49956 and Higher



872-A
K-G00-361-A03

872-B
K-G00-362-B03

872-C
K-G00-362-C03

872-D
K-G00-362-D03

872-E
K-G00-362-E03

CMA-8A (UC) : S/N 10001 and Higher
CMA-8ACE (EK) : S/N 40001 through 49955

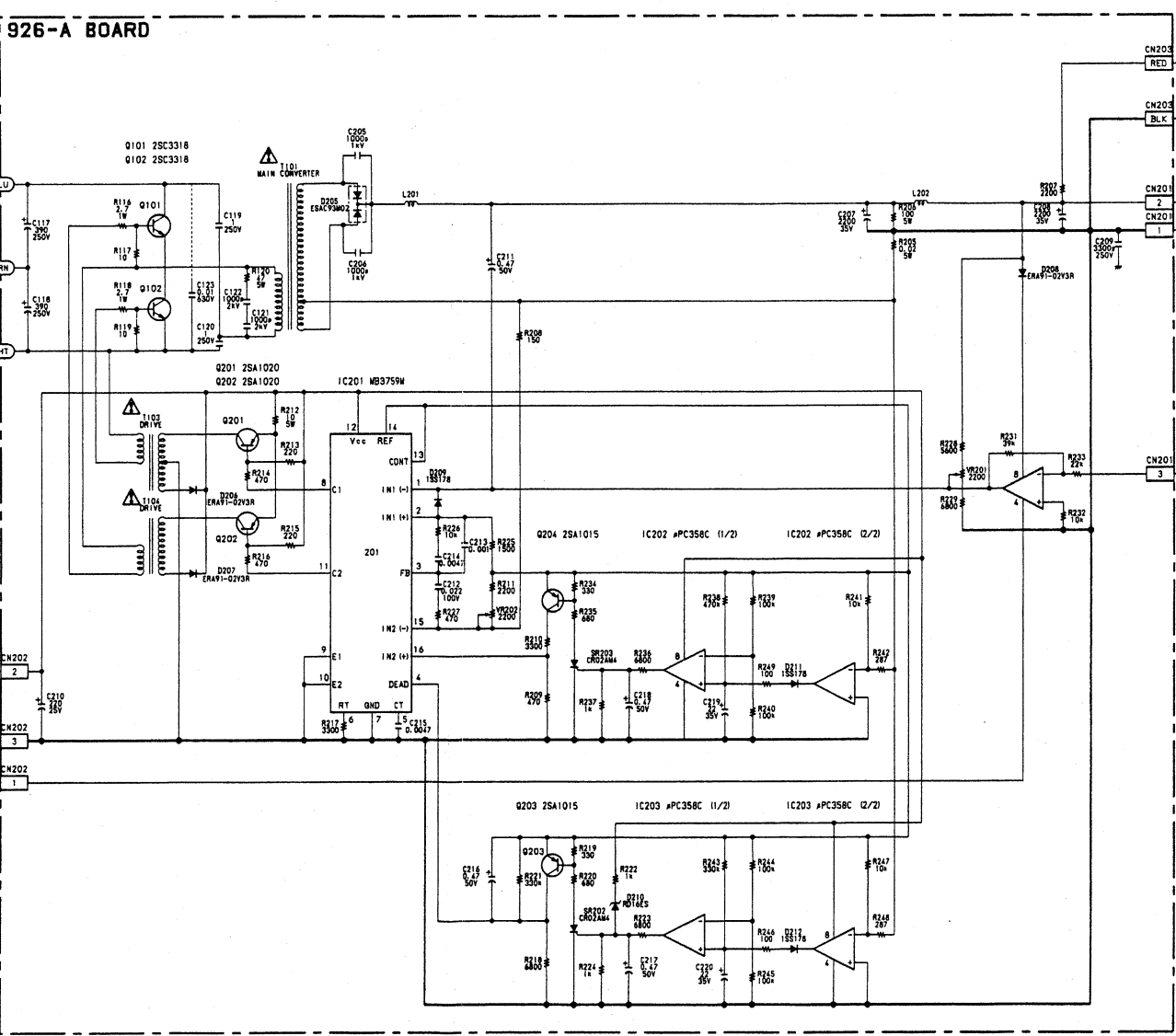
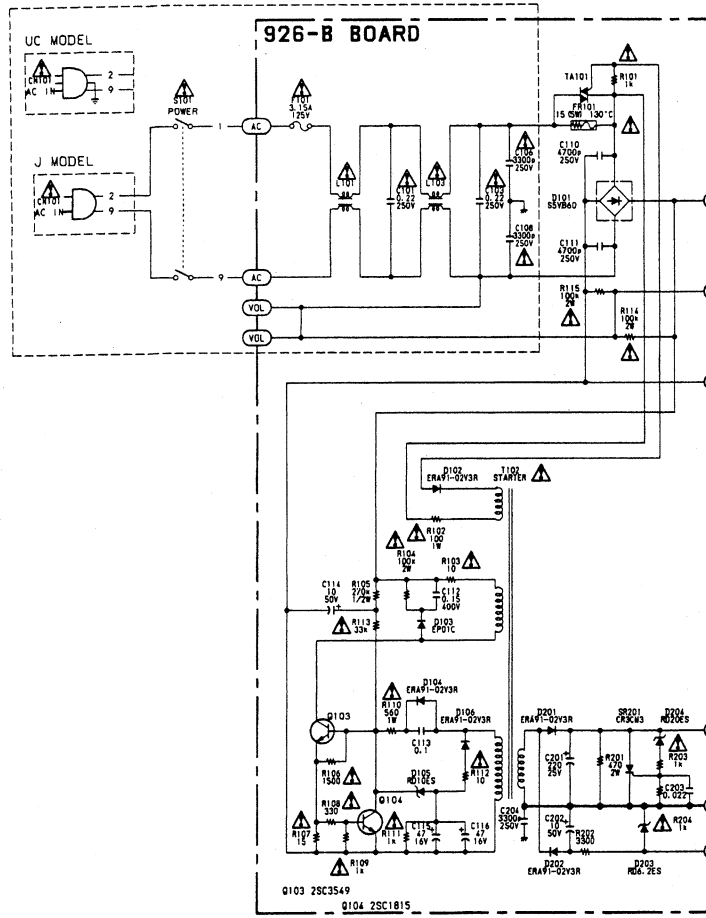
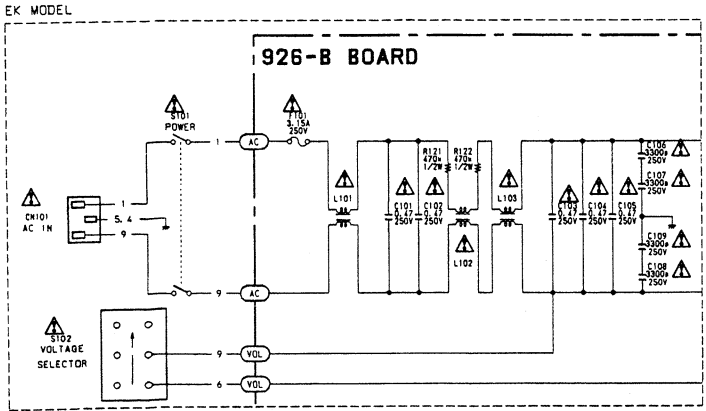
1

2

3

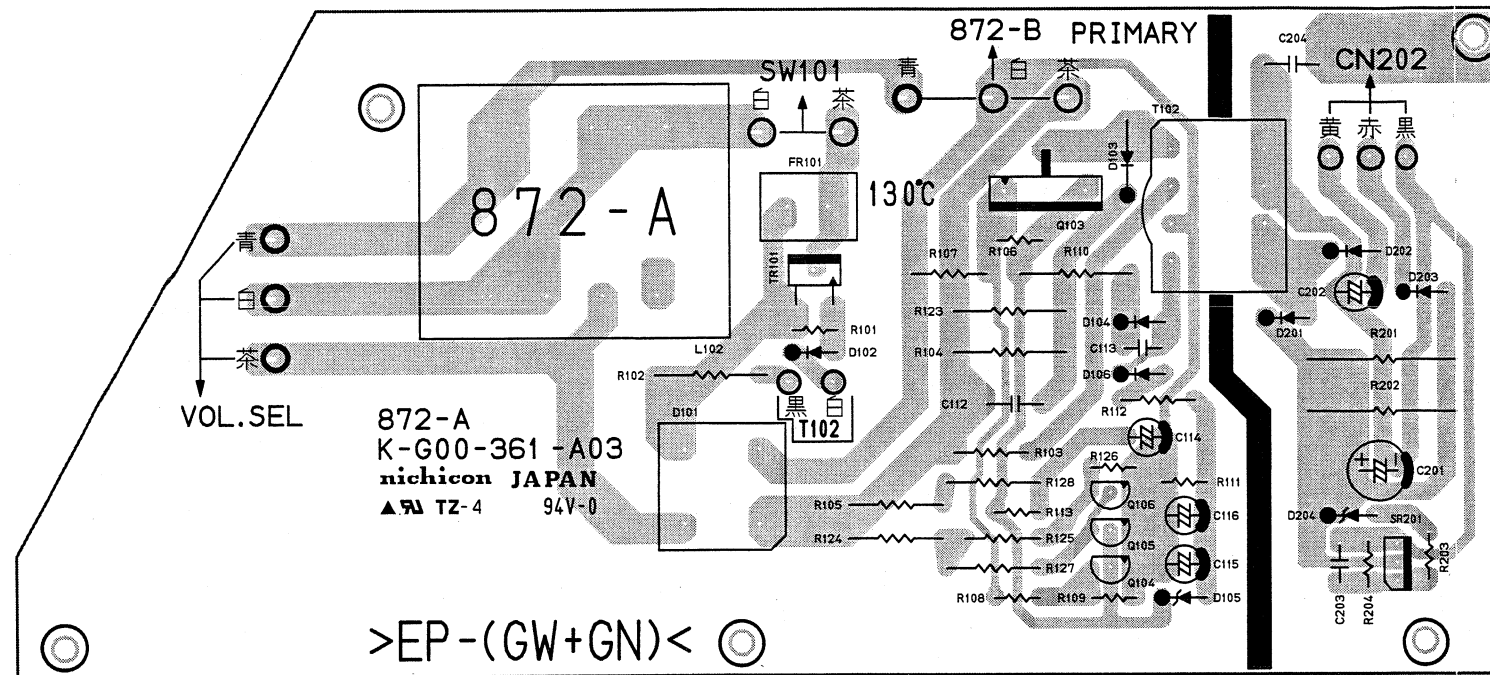
4

5



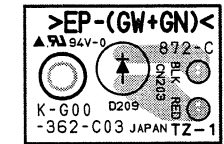
Section 7

Board Layouts

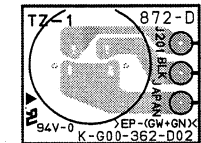


CMA-8ACE (EK) : S/N 49956 and Higher

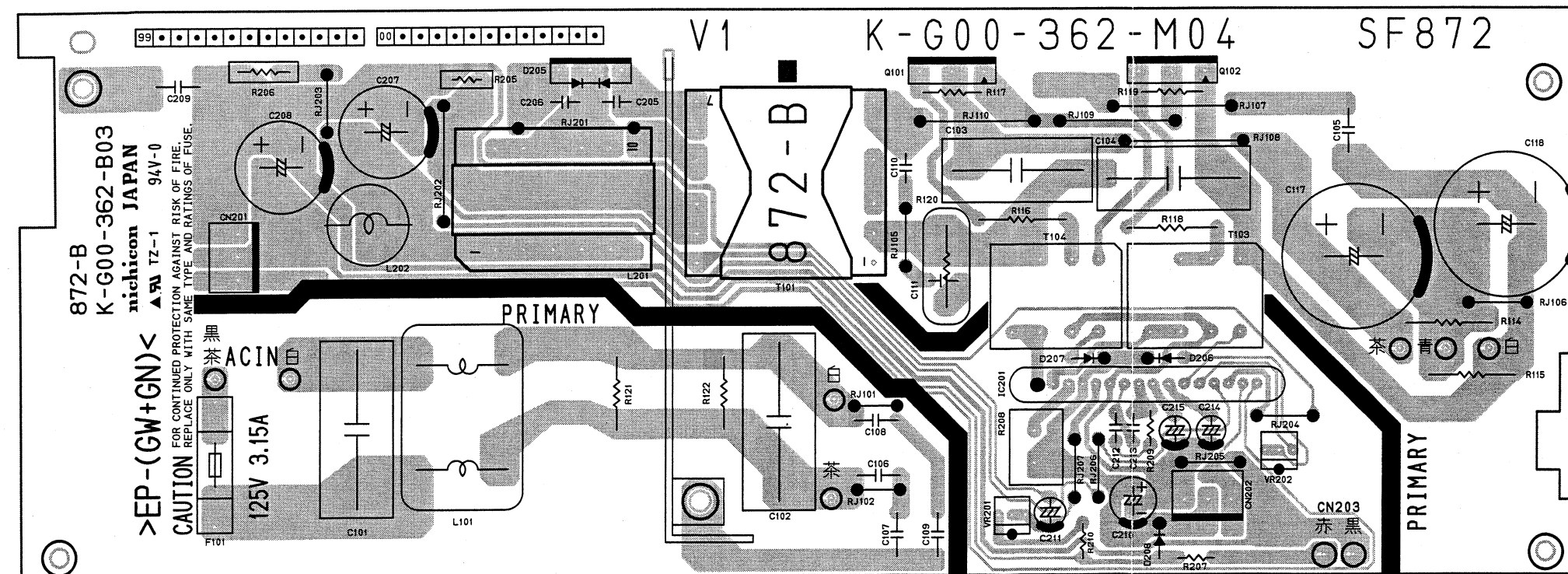
872-A -SOLDERING SIDE-



872-C -SOLDERING SIDE-
CMA-8ACE (EK) : S/N 49956 and Higher

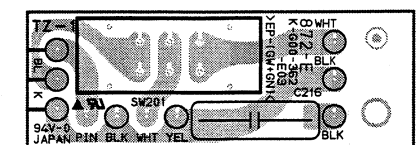


872-D -SOLDERING SIDE-
CMA-8ACE (EK) : S/N 49956 and Higher



CMA-8ACE (EK) : S/N 49956 and Higher

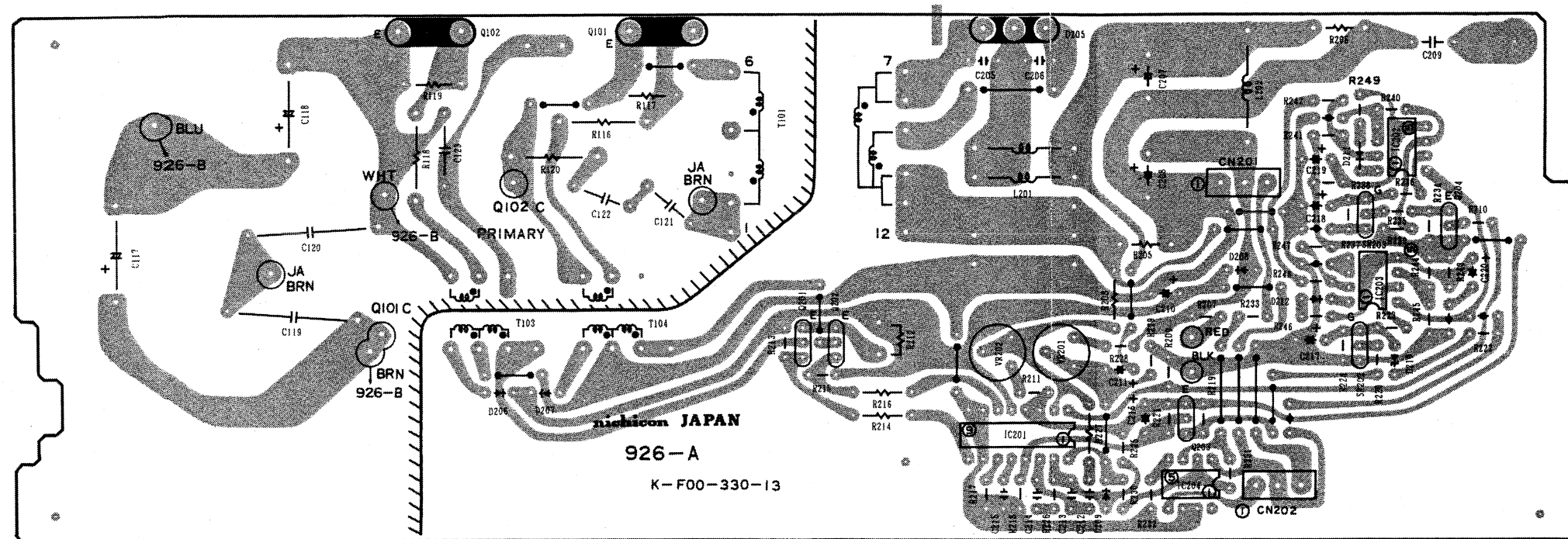
872-B -SOLDERING SIDE-



872-E -SOLDERING SIDE-
CMA-8ACE (EK) : S/N 49956 and Higher

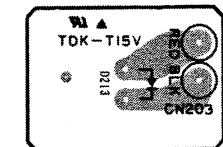
926-A, 926-B, 926-C, 926-D, 926-E

926-A, 926-B, 926-C, 926-D, 926-E



CMA-8A (UC) : S/N 10001 and Higher
CMA-8ACE (EK) : S/N 40001 through 49955

926-A -SOLDERING SIDE-



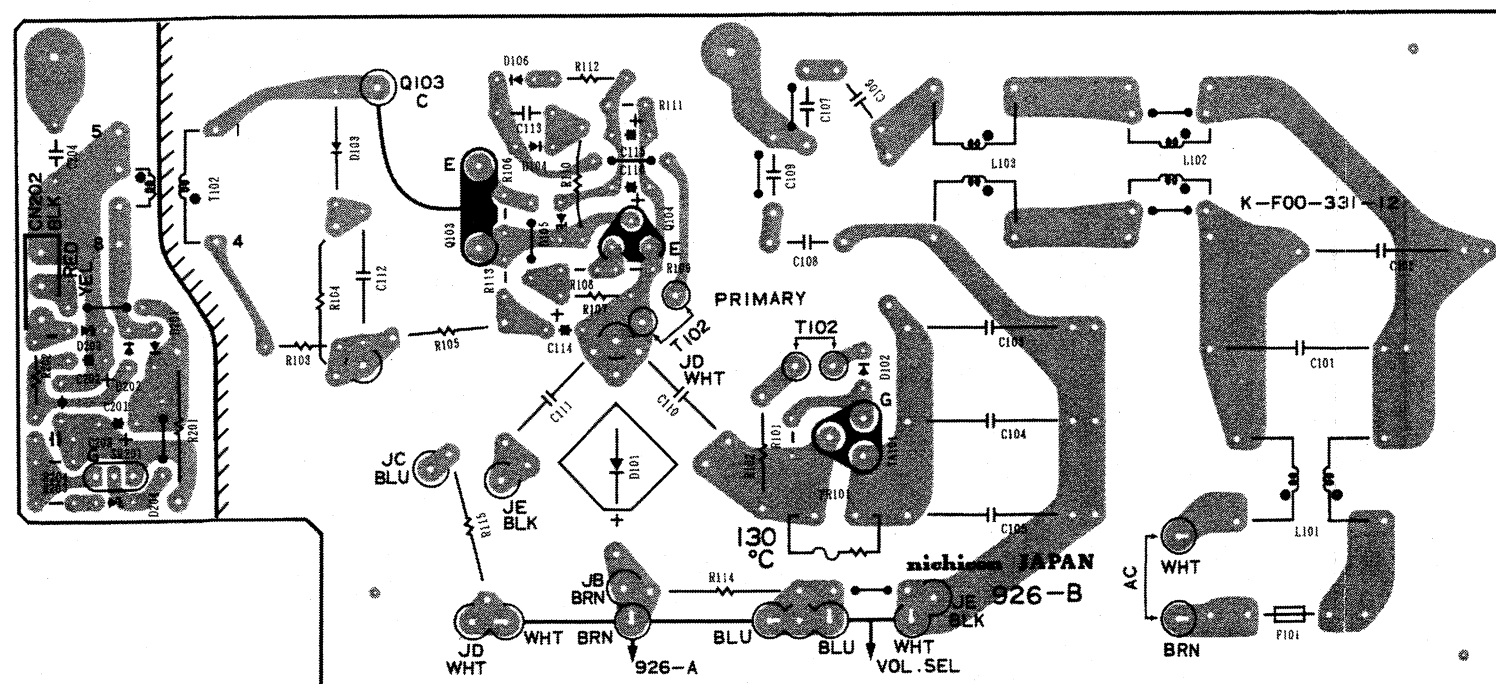
926-C -SOLDERING SIDE-

CMA-8A (UC) : S/N 10001 and Higher
CMA-8ACE (EK) : S/N 40001 through 49955



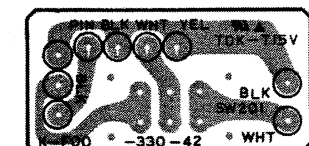
926-D -SOLDERING SIDE-

CMA-8A (UC) : S/N 10001 and Higher
CMA-8ACE (EK) : S/N 40001 through 49955



CMA-8A (UC) : S/N 10001 and Higher
CMA-8ACE (EK) : S/N 40001 through 49955

926-B -SOLDERING SIDE-



926-E -SOLDERING SIDE-

CMA-8A (UC) : S/N 10001 and Higher
CMA-8ACE (EK) : S/N 40001 through 49955